ATTACHMENT D

MAPS AND CROSS SECTION OF USDWS

TABLE OF CONTENTS

FIGURES

1. UNDERGROUND SOURCES OF DRINKING WATER

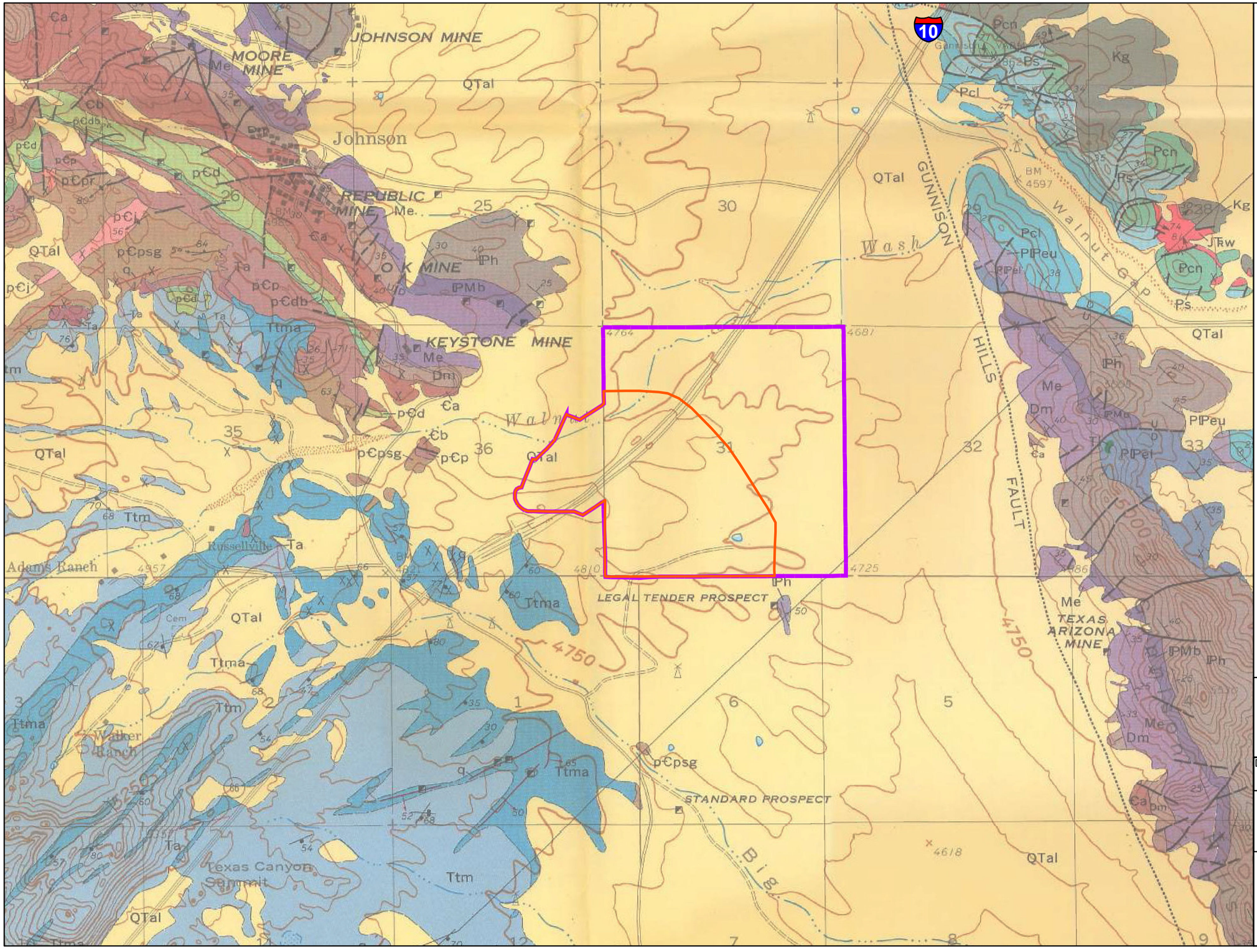
This Attachment was prepared in support of Excelsior Mining Arizona, Inc.'s (Excelsior's) Underground Injection Control (UIC) Permit application to the United States Environmental Protection Agency (USEPA). Excelsior is applying for an area Class III UIC permit to install a wellfield for in-situ recovery (ISR) of copper at the Gunnison Copper Project (Project), located in Cochise County, Arizona.

This attachment includes maps and cross sections that depict the vertical limits of underground sources of drinking water (USDWs) within the Area of Review (AOR) as defined in Attachment A of this UIC application. Figure D-1 shows the surficial geology of the Project area, Figure D-2 shows the bedrock surface geology, and figures D-3, D-4, and D-5 are cross sections through the AOR that show USDWs (shaded), the injection formation, and the direction of water movement.

The following units within the AOR are considered USDWs:

- Saturated Basin Fill, where saturated;
- Bedrock in the oxide zone, where saturated;
- The top 200 feet of the sulfide zone;
- Tertiary quartz monzonite.

Additional information regarding the regional geologic setting, orogenic history, and geologic formations is provided in Attachment F of this UIC Application.



Legend

- Gunnison Copper Project
- Area of Review
- QTal - Quaternary Alluvium (Basin Fill)
- Ttm - Texas Canyon Quartz Monzonite
- Ttma - Texas Canyon Quartz Monzonite (altered phase)
- jTrw - Walnut Gap Volcanics
- Pcn - Concha Limestone
- Ps - Scherrer Formation
- Pcl - Colina Limestone
- PPe - Earp Formation (PPeu, PPel)
- PPh - Horquilla Limestone
- PPmb - Black Prince Limestone
- Me - Escabrosa Limestone
- Dm - Martin Formation
- Ca - Abrigo
- Cb - Bolsa Quartzite
- pCd - Dripping Springs Quartzite (Apache Group)
- pCp - Pioneer Shale (Apache Group)
- pCpsg - Pinal Schist

Geology reprinted from Cooper and Silver (1964)

0 1,000 2,000 4,000
Feet

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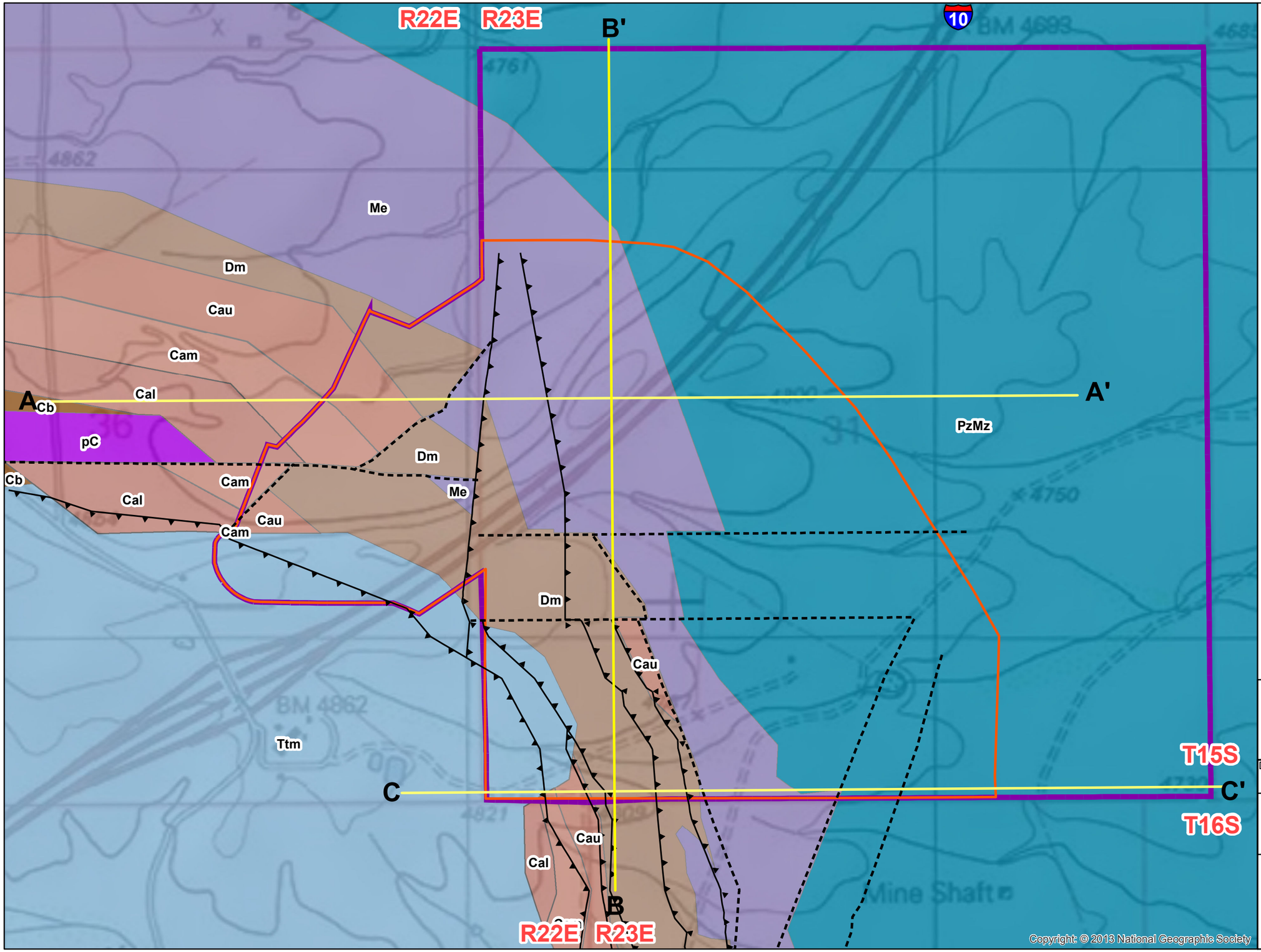
FIGURE D-1
Surficial Geologic Map



Legend

- Gunnison Copper Project
- Area of Review
- Cross Section Line
- Normal or Vertical Fault
- Thrust Fault
- Ttm - Texas Canyon Quartz Monzonite
- Me - Escabrosa Limestone
- Dm - Martin Formation
- Pz/Mz - Mesozoic/Palezoic Undivided
- Cal - Upper Abrigo
- Cam - Middle Abrigo Formation
- Cal - Lower Abrigo
- Cb - Bolsa Quartzite
- pC - PreCambrian Undivided

Source: Excelsior Geologic Model

0 350 700 1,400
Feet

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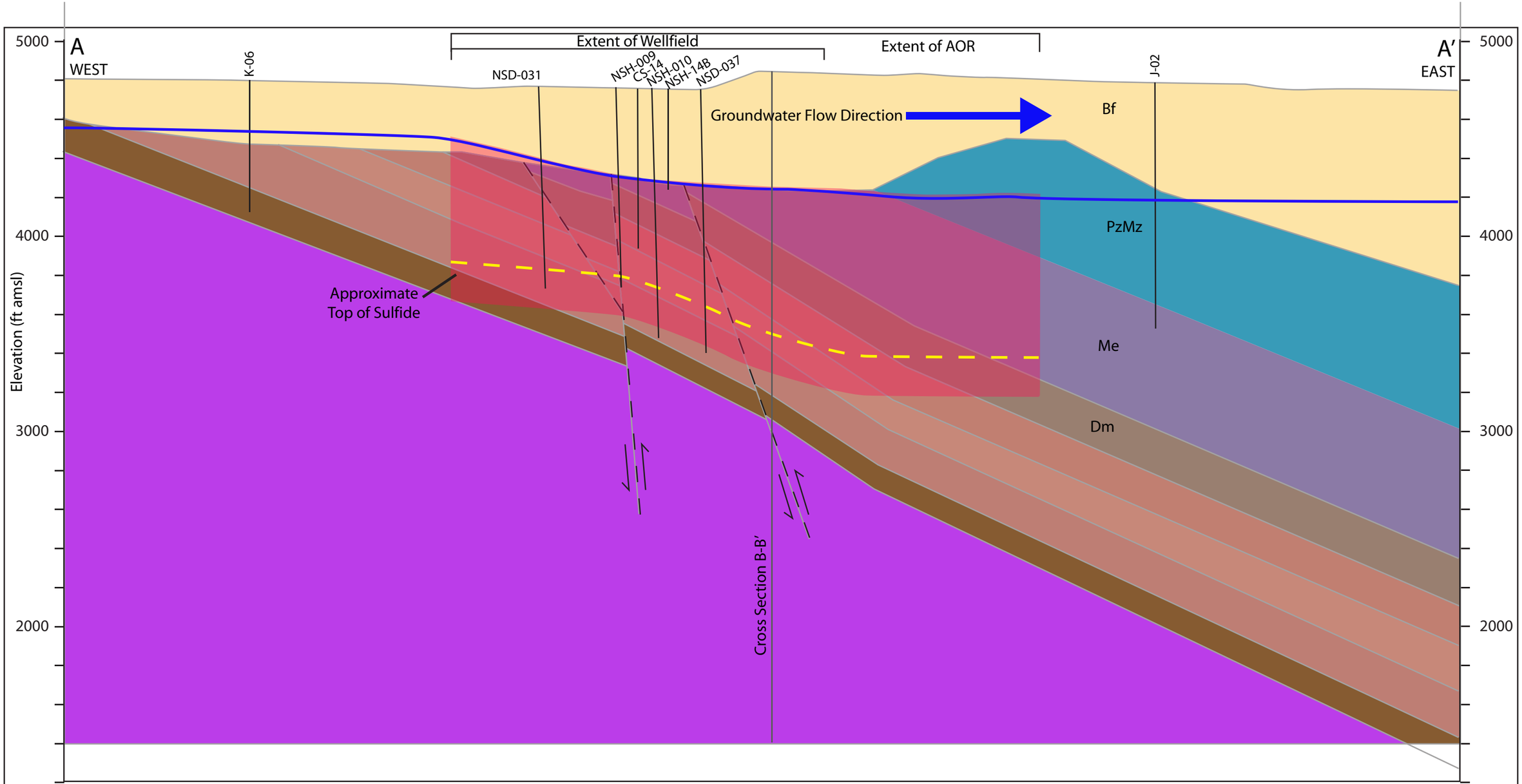
FIGURE D-2
Bedrock Surface Geologic Map



Source: Excelsior Geologic Model

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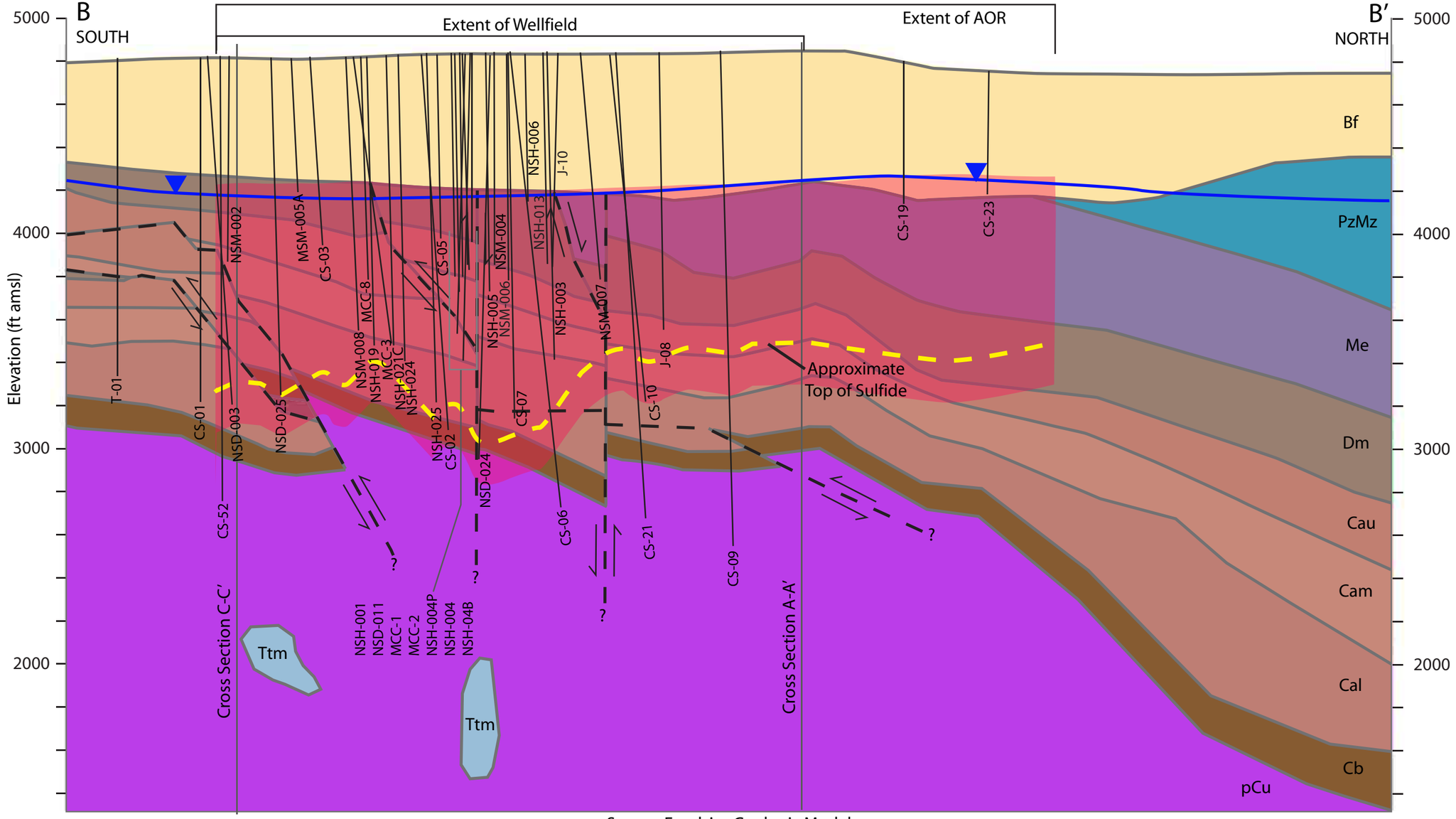
FIGURE D-3
Geologic Cross Section A - A’



Source: Excelsior Geologic Model

- Bf - Basin Fill
- Tqm - Texas Canyon Quartz Monzonite
- PzMz - Paleozoic/ Mesozoic Undivided
- Me - Escabrosa Limestone
- Dm - Martin Formation
- Cau - Upper Abrigo Formation
- Cam - Middle Abrigo Formation
- Cal - Lower Abrigo Formation
- Cb - Bolsa Quartzite
- pCu - PreCambrian Undivided
- Fault
- Potentiometric Surface
- USDW/Aquifer Exemption

0 500 1,000
Feet

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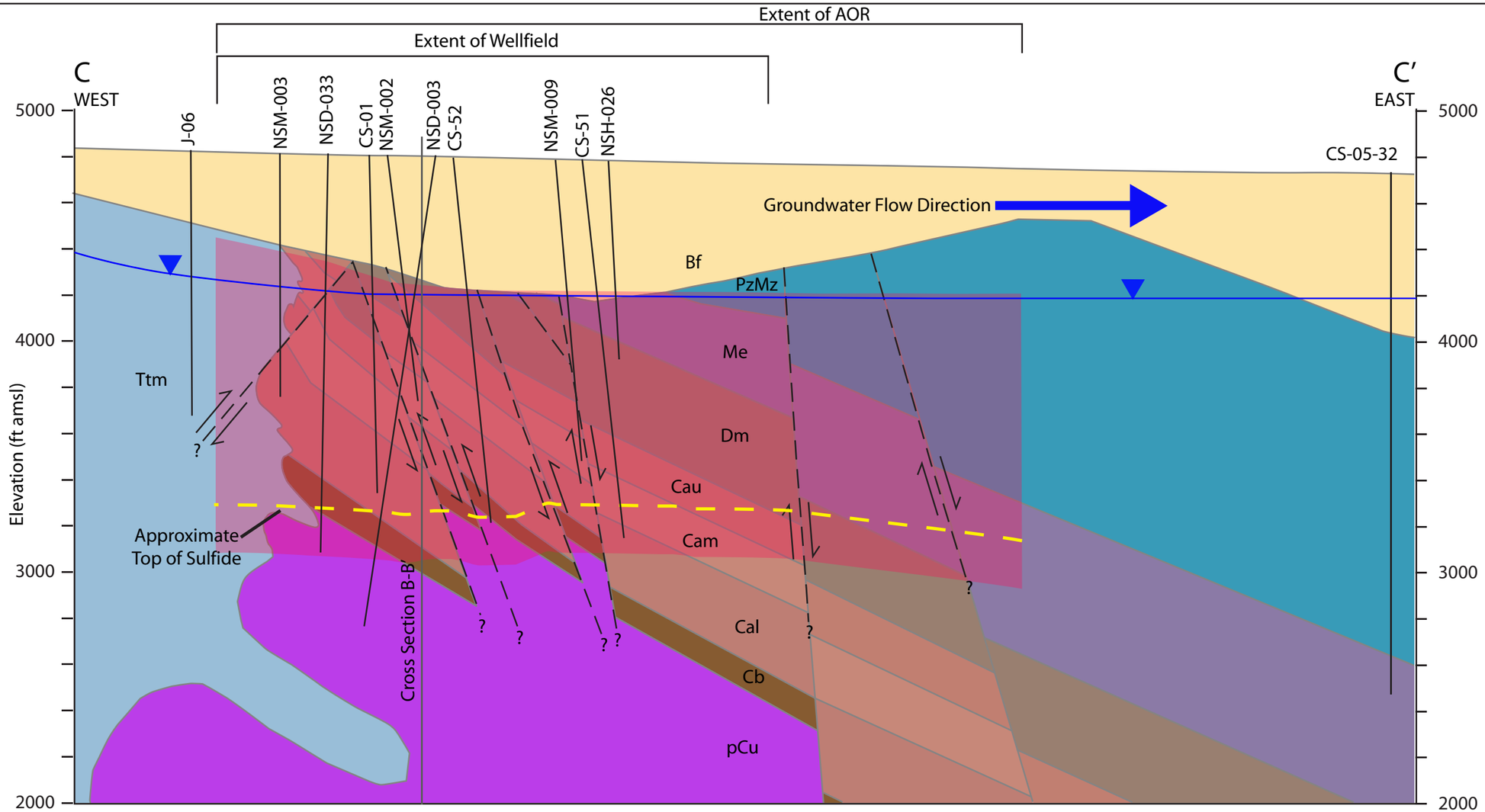
FIGURE D-4
Geologic Cross Section B-B'



Source: Excelsior Geologic Model

- Bf - Basin Fill
- Ttm - Texas Canyon Quartz Monzonite
- PzMz - Paleozoic/ Mesozoic Undivided
- Me - Escabrosa Limestone
- Dm - Martin Formation
- Cau - Upper Abrigo Formation
- Cam - Middle Abrigo Formation
- Cal - Lower Abrigo Formation
- Cb - Bolsa Quartzite
- pCu - PreCambrian Undivided
- Fault
- Potentiometric Surface
- USDW/ Aquifer Exemption

0 500 1,000
Feet

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FIGURE D-5
Geologic Cross Section C - C'